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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,922	11/24/2003	Clive Alva Barney	10007260-3	5222

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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
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EXAMINER

TO, TUYEN P

ART UNIT	PAPER NUMBER
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2825

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/720,922

Applicant(s)

BARNEY ET AL.

Examiner

Tuyen To

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 27-29 is/are pending in the application.
- 4a) Of the above claim(s) 1-26 and 30-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 27-29 is/are rejected.
- 7) ☒ Claim(s) 23, 25, 28 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/24/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is a response to the communication filed on 11/24/2003. Claims 1-13 and 27-29 are pending. Claims 14-26 and 30-34 are canceled.

Claim Objections

1. **The claim 2** is objected to because the phrase "wherein said first, second and third legs are parallel to each other " appears to be an error. According to claim 1, "a first of said legs being disposed generally parallel to said first and said second current paths", and also in the specification (page 8, lines 2- 6) and in the Fig. 1, the second leg and the third leg are generally perpendicular to the first and second current paths".

Examiner assumes that the recited limitation in claim 2 means wherein said first, second, third current paths instead of legs. Appropriate correction is required.

2. **The claim 3** is objected to because the recited element "wherein said second and third legs are generally perpendicular to said first, second and third current paths" appears to an error. Examine has understood that second leg and third leg are generally perpendicular to the first and second current paths and the third leg of the third path (see specification, page 7, line 22 – page 8, line 6). Appropriate correction is required.

3. **The claim 5** is objected to because the recited "may be" is not ^{*definited*} ~~the~~ *claimed* language. Appropriate correction is required.

4. **The claim 8, 9 and 11 are** objected to because the words "severing" in claim 8, "severed" in claim 9, and "severable" in claim 11 should be changed to be more definite claim language. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **(Claims 14-26 and 30-34 are canceled.)**

7. **Claims 1-9 and 11-13** are rejected under 35 U.S.C. 102(b) as being anticipated by **Alpperspach** et al. (European Patent Application, Publication No. 0210397)

Referring to claim 1 (original), **Alpperspach** discloses an access cell for an integrated circuit having a current pathway disposed therein for routing current through said access cell, said current pathway comprising:

a first current path disposed lengthwise in said access cell (in Fig.3; Fig. 5A-5B; col. 3 lines 55-56; col. 7, lines 36-52, Alpperspach discloses a generalized pattern of contact points and the first layer conductors for a standard cell includes a current path (a segment which is parallel , next to elements 18 in Fig.3 , and contains element 102 and 101) that is disposed lengthwise in a standard cell);

a second current path disposed lengthwise in said access cell (in Fig.3; Fig. 5A-5B; col. 3 lines 55-56; col. 7, lines 36-52, Alpperspach discloses a generalized pattern of contact points and the first layer conductors for a standard cell includes a current path (a segment which contains element 103, 104,113, and 117) that is disposed lengthwise in a standard cell); and

a third current path disposed between said first current path and said second current path, said third current path having a set of three legs (in Fig.3; Fig. 5A-5B; col. 3 lines 55-56; col. 7, lines 36-52, Alpperspach discloses a generalized pattern of contact points and the first layer conductors for a standard cell includes a current path (a segment which contains elements 103, 104,113, and 117) that is disposed lengthwise in a standard cell);

a first of said legs being disposed generally parallel to said first and said second current paths (in Fig.3; Fig. 5A-5B; col. 3 lines 55-56; col. 7, lines 36-52, Alpperspach discloses a generalized pattern of contact points and the first layer conductors for a standard cell includes a current path (a segment which contains elements 103, 104,113, and 117) that is disposed lengthwise in a standard cell);

a second of said legs connecting said first current path to said first leg (in Fig.3; Fig. 5A-5B; col. 3 lines 55-56; col. 7, lines 36-52, Alpperspach discloses a generalized pattern of contact points and the first layer conductors for a standard cell includes a segment is perpendicular to element 18, in Fig. 3, and connecting the two long

segments at the lower end, one contains elements 101 and 102 and other long segment contains 103, 104, 113, and 117); and,

a third of said legs connecting said first leg to said second current path (in Fig.3; Fig. 5A-5B; col. 3 lines 55-56; col. 7, lines 36-52, Alpperspach discloses a generalized pattern of contact points and the first layer conductors for a standard cell includes a segment is perpendicular to element 18, in Fig. 3, and connecting the two long segments at the upper end, one contains elements 115 and other long segment contains 103, 104, 113, and 117);

Referring to claim 2, Alpperspach discloses the access cell of claim 1 wherein said first, second and third legs are parallel to each other (in Fig.3; Fig. 5A-5B; col. 3 lines 55-56; col. 7, lines 36-52, Alpperspach discloses a generalized pattern of contact points and the first layer conductors for a standard cell includes three segments are parallel to element 18).

Referring to claim 3, Alpperspach discloses the access cell of claim 1 wherein said second and third legs are generally perpendicular to said first, second and third current paths (in Fig.3; Fig. 5A-5B; col. 3 lines 55-56; col. 7, lines 36-52, Alpperspach discloses a generalized pattern of contact points and the first layer conductors for a standard cell includes two short segments are perpendicular to element 18, in Fig. 3, and connecting the three long segments at the upper and the lower ends).

Referring to claim 4, Alpperspach discloses the access cell of claim 1 wherein said first, second and third current paths extend substantially the length of the cell (Fig. 3, shows three long segments next to the element 18 are disposed lengthwise in a standard cell).

Referring to claim 5, Alpperspach discloses the access cell of claim 1 further comprising:

a cut point disposed on said first leg, said cut point designating a region of said first leg at which said first leg may be physically severed (Fig. 3 and Fig. 5B; col. 8, lines 41-49 , **Alpperspach** discloses that a any part of thin segments in the M1 pattern which does not cover by the M2 conductors can be a cut point); and,

at least one connect point disposed on said first leg, said at least one connect point designating a region of said first leg at which said first leg may be connected to a net (in Fig. 3 and Fig. 5A-5B, col. 7, lines 36-52; in col. 8, lines 41-49, col. 8, lines, 50-68; col. 9, lines 1-13, **Alpperspach** discloses via elements 101-130, "connection points").

Referring to claim 6, Alpperspach discloses the access cell of claim 2 wherein said cut point is separated from said connect point by at least a minimum allowable distance, wherein said minimum allowable distance is specified in a set of spacing rules associated with said integrated circuit (in col.8, lines 41-49, "conductor to conductor spacing" required for the cut points).

Referring to claim 7, Alpperspach discloses the access cell of claim 1 wherein the first current path is separated from said third current path by at least a minimum allowable distance, wherein said minimum allowable distance is specified in a set of spacing rules associated with said integrated circuit (in col.8, lines 41-49, "conductor to conductor spacing" required for the cut points).

Referring to claim 8, Alpperspach discloses the access cell of claim 1 wherein said first current path is disconnected from said second current path by severing said first leg of said third current path (Fig. 3; Fig. 5B; col. 9, lines 30-53, a plurality of laser cut can be made to the M1 overlay pattern to create different segments as desired).

Referring to claim 9, Alpperspach discloses the access cell of claim 8 wherein said first leg of said third current path comprises a first end at which said first leg is connected to said third leg, and a second end at which said first leg is connected to said second leg and wherein said first leg is severed between said first and second ends to cause first current path to be disconnected from said second current path (Fig. 3 and Fig. 5B; col. 8, lines 41-49, **Alpperspach** discloses that a any part of thin segments in the M1 pattern which does not cover by the M2 conductors can be a cut point).

Referring to claim 11, Alpperspach discloses the access cell of claim 10 wherein said first leg of said third current path is severable (Fig. 3 and Fig. 5B; col. 8,

lines 41-49, **Alpperspach** discloses that a any part of thin segments in the M1 pattern which does not cover by the M2 conductors can be a cut point).

Referring to claim 12, Alpperspach discloses the access cell of claim 1 wherein said first leg is adapted and configured to connect to a net, said net being connectable to said first leg at a connect point, said connect point designating a region of said first leg at which said first leg is connectable to any net (Fig. 3, col. 7, lines 36-52, see "contact points"; col. 3, lines 12-15, see " intra cell connections"; in Fig. 5B shows the M1 metal layer of a standard cell after the cell personalized, the segments can be interconnected to any net by vias (col. 3, lines 13-15)).

Referring to claim 13, Alpperspach discloses the access cell of claim 1 wherein said current pathway comprises a wire disposed in a metal layer associated with said integrated circuit (in Fig. 3; col. 3, lines 8-15, see " conductive metal grid" and " intracell connections").

(Claims 14-26 are canceled.)

8. **Claims 27-29** are rejected under 35 U.S.C. 102(b) as being anticipated by **Baxter et al. (Baxter) (US Patent No. 6,872,601)**.

Referring to claim 27, Baxter discloses a computer system comprising: a processor adapted to modify a netlist (Fig. 5A; col. 5 line 60 through col. 6, line 23) to cause a set of nets listed in said netlist to be represented as two unique nets (Fig. 7A-C; col. 12, line 30 through col. 14, line 20), and being further adapted to modify said netlist to include a set of access cells (Fig. 5A; col. 5 line 60 through col. 6, line 23), wherein said access cells are defined as being coupled between different ones of said two unique nets (Fig. 5A, col. 5 line 60 through col. 6, line 23); and,

a programmable medium coupled to said processor for storing said netlist before and after it has been modified (Fig. 2, element 242).

Referring to claim 28. Baxter discloses the computer system of claim 27 wherein said programmable medium further stores a place and route tool executable by said processor to create a layout (Fig. 2, element 242; col. 2, lines 48-58).

Referring to claim 29. **Baxter** discloses the computer system of claim 27 wherein said programmable medium further stores a standard cell library (Fig. 2, element 242).

9. (Claims 14-26 and 30-34 are canceled.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alpperspach in view of Baxter et al. (Baxter) (US Patent No. 6,872,601).

Referring to claim 10, Alpperspach substantially discloses all the elements in claim 1 except

wherein said first current path is adapted and configured to be connected to a first net,

and further wherein said second current path is adapted and configured to be connected to a second net,

Baxter discloses a stopper cell (Fig. 7A-7C) including a first current path that can be used to connected to a first net (Fig. 7A-C, element 710); and a second current path that can be used to connected to a second net (Fig. 7A-C, element 735).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the step taught by **Alpperspach** with that of **Baxter** to thereby for avoiding to reroute signal paths after modifying delay elements (col. 4, lines 29-38).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuyen To whose telephone number is (571) 272-8319. The examiner can normally be reached on 9:00am-5:00pm.

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11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuyen To
Patent Examiner
AU 2825



VUTHE SIEK
PRIMARY EXAMINER